

## Two new species of *Austracarus* (Acari: Trombiculidae) from South Africa

by

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*Austracarus lukoschusi*, spec. nov., and *Austracarus masonae*, spec. nov., are described from specimens collected from a Mouse Shrew, *Myosorex varius* (Smuts), taken in South Africa.

There are 4 recorded species in the genus *Austracarus* Lawrence, 1949, all from small mammals collected in Africa. Examination of chiggers collected from mammals in South Africa has revealed 2 new species of this genus from a single individual Mouse Shrew, *Myosorex varius* (Smuts), which are described below. Terminology follows Goff *et al.* (1982).

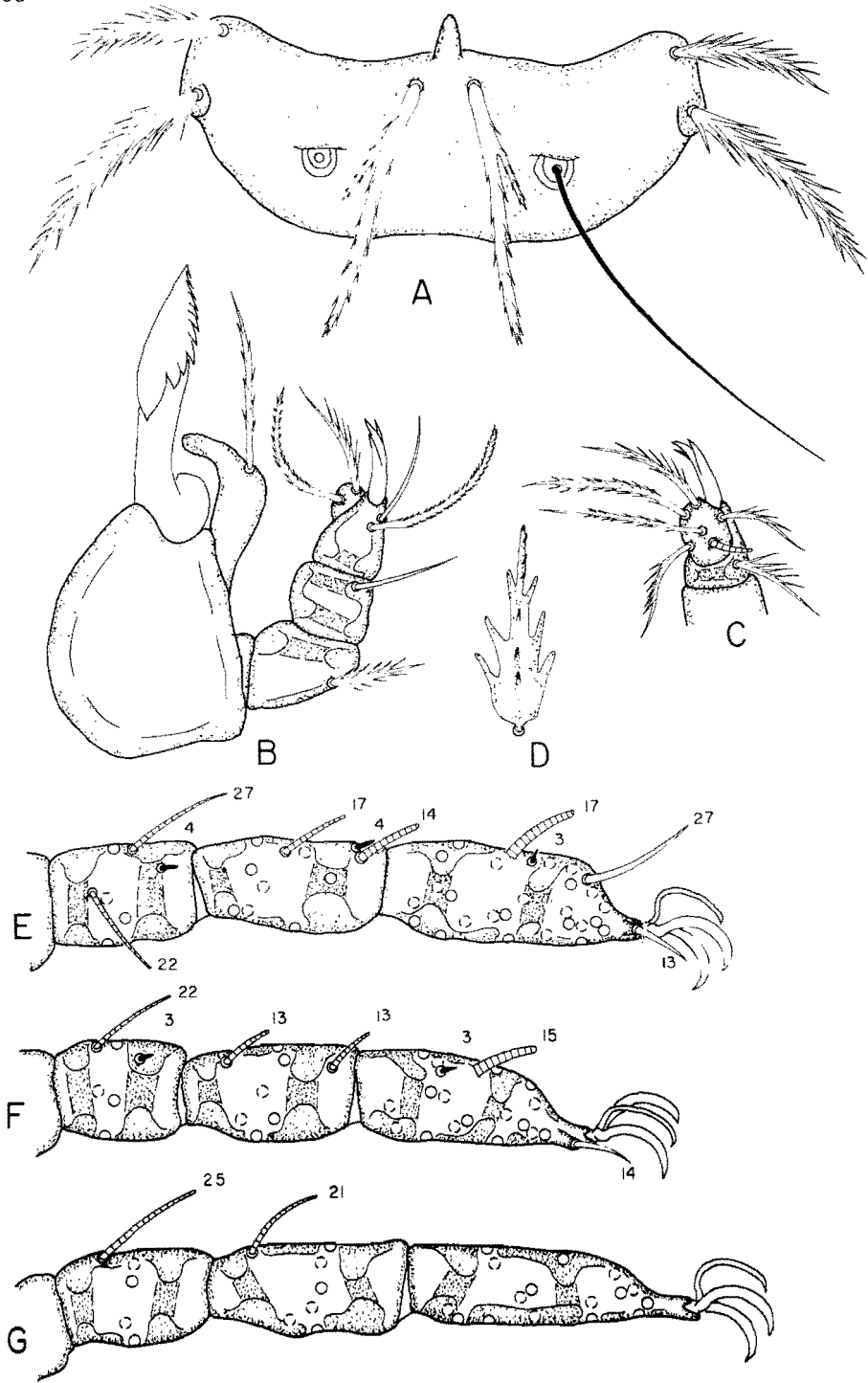
### ***Austracarus lukoschusi*, spec. nov., Fig. 1.**

**LARVAE.** *Idiosoma*. Measuring  $215\ \mu\text{m} \times 195\ \mu\text{m}$  in unengorged specimen. Eyes 2/2, on ocular plate, anterior  $15\text{--}17\ \mu\text{m}$ , posterior  $12\ \mu\text{m}$  diam. Humeral setae not distinguishable; ca. 160 dorsal idiosomal setae arranged in irregular rows, measuring  $32\text{--}63\ \mu\text{m}$ , anterior setae shortest; 1 pair of sternal setae at level of coxae III, measuring  $40\text{--}49\ \mu\text{m}$ ; 29 preanal setae,  $35\text{--}41\ \mu\text{m}$ ; ca. 52 postanal setae,  $37\text{--}52\ \mu\text{m}$ ; total idiosomal setae 242. Dorsal idiosomal and postanal setae expanded, serrate (Fig. 1D), preanal and sternal setae cylindrical.

*Gnathosoma*. Palpal setal formula B/N/BNB/7B; palpal claw 3-pronged; galeala B; cheliceral blade ( $63\text{--}74\ \mu\text{m}$  long) with apical hoodlike cap, bearing lateral denticles; gnathobase lightly punctate, bearing a pair of branched setae.

*Scutum*. Lightly punctate with biconcave anterior margin; posterior margin sinuous; AM bases posterior to level of AL bases; SB posterior to level of PL bases; AM setae each with an accessory branch ( $13\text{--}16\ \mu\text{m}$  long), each accessory branch with setules;  $\text{AM} > \text{PL} > \text{AL}$ ; sensillae flagelliform, nude; anterior median nasus present, measuring  $12\ \mu\text{m} \times 7\ \mu\text{m}$ ;  $\text{PW}/\text{SD} = 1.96\text{--}2.26$ . Scutal measurements in micrometres of holotype followed by means and ranges of type series in parentheses: AW 99 (97, 90–100); PW 109 (107, 101–116); AA 14 (14, 13–16); SB 53 (53, 48–60); ASB 33 (32, 29–37); PSB 17 (20, 17–22); AP 16 (17, 16–18); AM 62 (65, 60–67); AL 39 (40, 37–45); PL 55 (59, 54–63); sens. 95 (92, 86–96).

*Legs*. All 6-segmented, terminating in a pair of claws and a clawlike empodium. Onychotriches absent. IP 872–950. *Leg I*. 282–319  $\mu\text{m}$ ; coxa with 2 branched se-



tae (2B); trochanter 1B; femur 6B; genu 4B, 2 genualae, microgenuala; tibia 8B, 2 tibialae, microtibiala; tarsus ( $68\text{ }\mu\text{m} \times 26\text{ }\mu\text{m}$ ) 25B, tarsala ( $16\text{--}17\text{ }\mu\text{m}$ ), microtarsala, subterminala, pretarsala. *Leg II*. 279–296  $\mu\text{m}$ ; coxa 1B; trochanter 1B; femur 6B; genu 4B, genuala, microgenuala; tibia 6B, 2 tibialae; tarsus ( $63\text{ }\mu\text{m} \times 26\text{ }\mu\text{m}$ ) 17B, tarsala ( $15\text{--}17\text{ }\mu\text{m}$ ), microtarsala, pretarsala. *Leg III*. 311–335  $\mu\text{m}$ ; coxa 1B; trochanter 1B; femur 5B; genu 4B, genuala; tibia 6B, tibiala; tarsus ( $73\text{ }\mu\text{m} \times 20\text{ }\mu\text{m}$ ) 16B.

**MATERIAL EXAMINED.** Holotype and 11 paratypes from SOUTH AFRICA: Diepmalle, ex *Myosorex varius* (T.M. 32 287), taken 29.v.1980, Dippenaar, coll. Holotype and some of the available paratypes housed in the collection of the South African Institute for Medical Research, Johannesburg, other paratypes are housed in the collections of the B. P. Bishop Museum, Honolulu, U.S. National Museum of Natural History (chigger collection currently housed at B. P. Bishop Museum), Katholieke Universiteit, Nijmegen, and Institut Royal des Sciences Naturelles de Belgique, Brussels.

**REMARKS.** Vercammen-Grandjean (1957) listed 3 species of *Austracarus*, which he then regarded as a subgenus of *Acomatacarus*, all from Africa: *A. polydiscum* (Oudemans, 1910), *A. procaviae* (Lawrence, 1949) and *A. dendrohyracis* Vercammen-Grandjean, 1957. Subsequently, Vercammen-Grandjean (1959) described an additional species, *A. wittebolsi*, from an African mole. The generic status of *Austracarus* was re-established along with a description of the nymph of *A. dendrohyracis* by Vercammen-Grandjean (1965). This interpretation is followed here.

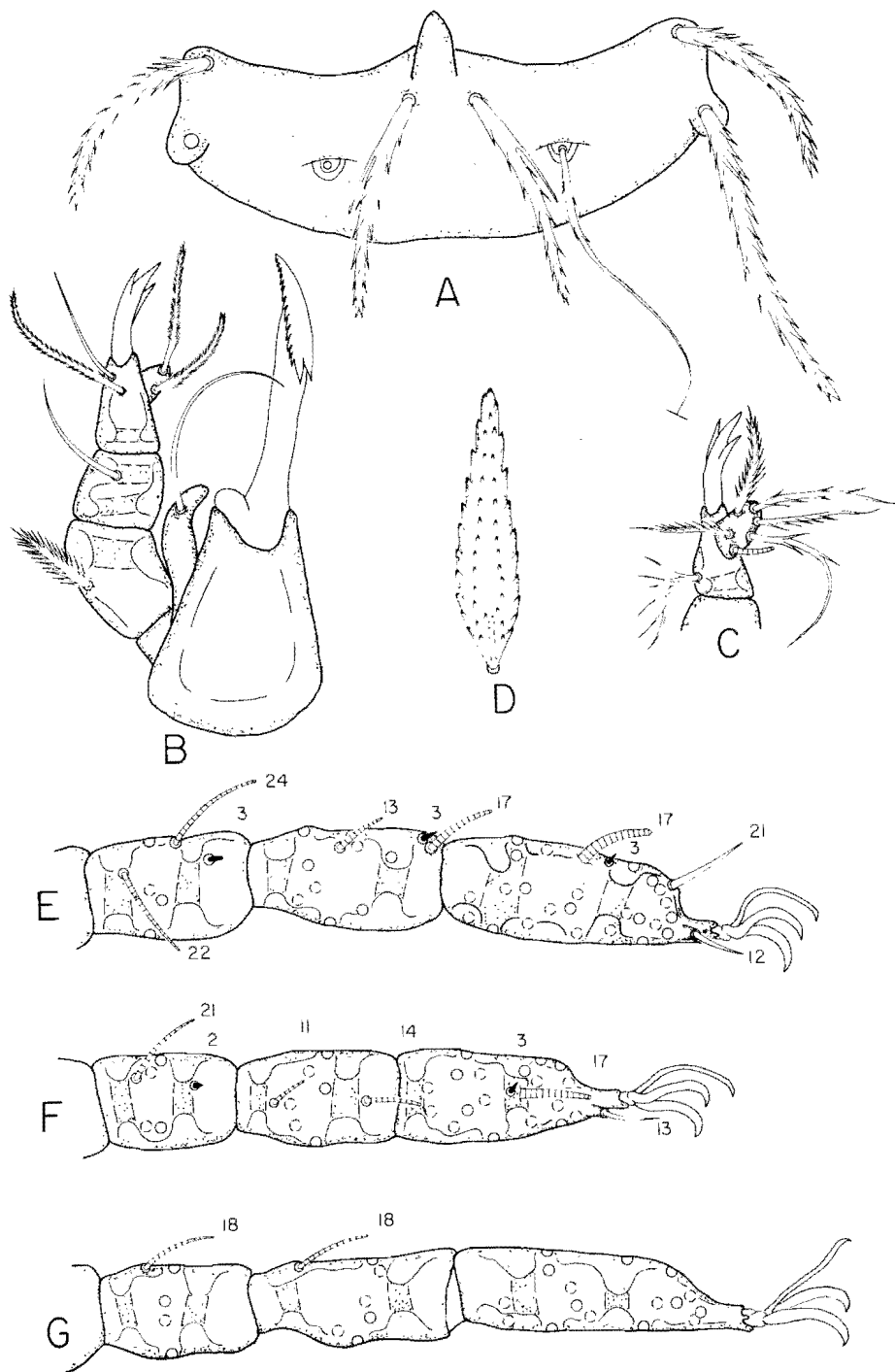
*A. lukoschusi* may be separated from the remaining species in the genus by the form of the dorsal idiosomal and postanal setae (Fig. 1D) and the presence of an accessory branch on each of the AM setae. The dorsal idiosomal and postanal setae are uniformly unexpanded in both *A. dendrohyracis* and *A. procaviae*. In *A. polydiscum*, the anterior rows of dorsal setae are unexpanded and the posterior rows along with the postanal setae are disk-like. For *A. wittebolsi*, the anterior rows of dorsal idiosomal setae are slightly expanded and serrate, while the posterior-most 4–5 rows and postanal setae are heavy, cylindrical and inserted on sclerotized plates. Dorsal idiosomal and postanal setae in *A. lukoschusi* are uniformly expanded and not inserted on sclerotized plates. Accessory branches on the AM setae are not reported from any of the other known species of *Austracarus*, but are quite well developed in *A. lukoschusi*. Additionally the denticles on the cheliceral blade of *A. lukoschusi* are confined to the expanded hood-like cap, while they are present on the dorsal aspect of the cheliceral blade for other known species in the genus.

This species is named in honour of Dr. F. S. Lukoschus, Katholieke Universiteit, Nijmegen, in recognition of his numerous contributions to the field of acarology.

***Austracarus masonae*, spec. nov., Fig. 2.**

**LARVAE.** *Idiosoma*. Measuring  $425\text{ }\mu\text{m} \times 365\text{ }\mu\text{m}$  in partially engorged specimen. Eyes 2/2, on ocular plate, anterior  $16\text{ }\mu\text{m}$  diam., posterior  $9\text{ }\mu\text{m}$  diam. 1 pair of humeral setae, measuring  $64\text{--}70\text{ }\mu\text{m}$ ; ca. 104 dorsal idiosomal setae, arranged in irregular

Fig. 1. Larva of *Austracarus lukoschusi*, **spec. nov.** A, scutum showing 1 sensilla and 1 sensillary base; B, dorsal aspect of gnathosoma; C, ventral aspect of palpal tibia and tarsus; D, dorsal idiosomal seta; E, leg I distal 3 segments showing specialized setae (measurements in micrometres) and bases of branched setae; F, leg II as above; G, leg III as above.



rows, beginning 20–18 . . . , measuring 50–70  $\mu\text{m}$ , anterior median rows shortest; 1 pair of sternal setae at level of coxae III, measuring 40–50  $\mu\text{m}$ ; 28–30 preanal setae, 40–42  $\mu\text{m}$ ; 20–22 postanal setae, 49–54  $\mu\text{m}$ ; total idiosomal setae ca. 156–158. Dorsal idiosomal and postanal setae expanded (Fig. 2D), humeral setae heavily cylindrical, sternal and preanal setae finely ciliated.

*Gnathosoma*. Palpal setal formula B/N/BNB/7B; palpal claw 3-pronged; galeala N; cheliceral blade (75  $\mu\text{m}$  long) with apical cap, bearing lateral denticles; gnathobase lightly punctate, bearing a pair of branched setae.

*Scutum*. Lightly punctate with biconcave anterior margin; posterior margin sinuous; AM bases posterior to level of AL bases; SB posterior to level of PL bases; AM setae each with an accessory branch (18  $\mu\text{m}$  long), accessory branches nude; sensillae flagelliform with basal barbs, nude distally, sensillae broken in all specimens; anterior median nasus present, measuring 17  $\mu\text{m} \times 7 \mu\text{m}$ ; PW/SD = 2.15 – 2.42. Scutal measurements in micrometres of holotype followed by those of the paratype in parentheses: AW 115 (96); PW 119 (112); AA 15 (13); SB 55 (51); ASB 29 (33); PSB 20 (19); AP 19 (20); AM 66 (56); AL 50 (49); PL 85 (74); sens. 75+.

*Legs*. All 6-segmented, terminating in a pair of claws and a clawlike empodium. Onychotriches absent. IP 953. *Leg I*. 329  $\mu\text{m}$ ; coxa 2B; trochanter 1B; femur 6B; genu 4B, 2 genualae, microgenuala; tibia 8B, 2 tibialae, microtibiala; tarsus (73  $\mu\text{m} \times 25 \mu\text{m}$ ) 24B, tarsala (17  $\mu\text{m}$ ), microtarsala, subterminala, pretarsala. *Leg II*. 294  $\mu\text{m}$ ; coxa 1B; trochanter 1B; femur 6B; genu 4B, genuala, microgenuala; tibia 6B, 2 tibialae; tarsus (60  $\mu\text{m} \times 22 \mu\text{m}$ ) 18B, tarsala (16–17  $\mu\text{m}$ ), microtarsala, pretarsala. *Leg III*. 330  $\mu\text{m}$ ; coxa 1B; trochanter 1B; femur 5B; genu 4B, genuala; tibia 6B, tibiala; tarsus (78  $\mu\text{m} \times 19 \mu\text{m}$ ) 16B.

**MATERIAL EXAMINED.** Holotype and 1 paratype from SOUTH AFRICA: Diepmalle, ex *Myosorex varius* (T.M. 32 287), taken 29.v.1980, Dippenaar, coll. Holotype housed in the collection of the South African Institute for Medical Research, Johannesburg, and the paratype is housed in the collection of the U.S. National Museum of Natural History (chigger collection currently housed at B. P. Bishop Museum, Honolulu).

**REMARKS.** Among described species of *Austracarus*, *A. masonae* is most similar to *A. lukoschusi* in having all dorsal idiosomal and postanal setae expanded and AM setae with an accessory branch. *A. masonae* may be separated from *A. lukoschusi* by the form of the dorsal idiosomal setae (figs ID & 2D), having accessory AM branches nude (with setules in *A. lukoschusi*, galeala nude (with barbs in *A. lukoschusi*), sensillae with basal barbs (nude in *A. lukoschusi*) and  $\text{PL} > \text{AM}$  ( $\text{PL} < \text{AM}$  in *A. lukoschusi*).

This species is named in honour of Ms. Gail Mason, Department of Entomology, University of Hawaii at Manoa.

Fig. 2. Larva of *Austracarus masonae*, **spec. nov.** A, scutum showing 1 sensilla and 1 sensillary base; B, dorsal aspect of gnathosoma; C, ventral aspect of palpal tibia and tarsus; D, dorsal idiosomal seta; E, leg I distal 3 segments showing specialized setae (measurements in micrometres) and bases of branched setae; F, leg II as above; G, leg III as above.

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